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ECONOMIC VEGETABLE PRODUCTS.

Die Rohstoffe des Pflanzenreiches. By Dr. Julius Wiesner. Second Edition. Ten parts. In two volumes. Pp. xi + 795 and vi + 1070. (Leipzig: Engelmann, 1900-1903.) Price 3l.

THE vast importance of an accurate knowledge of the raw materials of vegetable origin must be so patent to everyone as to give rise to the thought that the number of text-books on the subject must necessarily be very large. From the vast and ever-increasing colonies of this country huge quantities of material of the most varied description, and almost incalculable value, are annually poured into its markets. Hundreds of different kinds of timbers, fibres, gums, resins, dye-stuffs, tanning materials, &c., are brought hither to be devoted to various technical uses or to be distributed to other countries. Very frequently, too, specimens of drugs and other products are sent from abroad accompanied by queries as to their quality, uses and value; such queries are generally addressed to brokers or to the sender's private friends. It is therefore evidently a matter of primary importance that these products should be investigated and classified, their uses examined into, and the means by which their identity and purity may be established should be determined and recorded. A lexicon or handbook might thus be compiled which would be of inestimable worth to those who deal in or use such vegetable products, and might be the means of introducing valuable substances, or even of establishing new industries. It is in England of all countries where one would expect to find properly staffed institutions where such investigations would be carried out, and where men would be trained for such work; in England, unfortunately, this study is much neglected, although the conditions are more favourable than elsewhere. Museums with large collections of economic products exist, but they remain for the most part a mass of unsifted and undigested material. An effort in the right direction has, it is true, been made in the Imperial Institute, which, properly encouraged and extended, may yet yield valuable results.

It is remarkable that Austria should be the country in which the study of economic vegetable products has been most sedulously pursued. The first edition of Prof. Wiesner's "*Rohstoffe des Pflanzenreiches*" was published in Vienna in 1873, but since that time the field has so rapidly increased in extent that the author found it necessary, in preparing a second edition, to invite the cooperation of a number of his colleagues, each of them a specialist in his particular department. Amongst these the names of Hanausek, v. Höhnelt and Vogl may be mentioned as a sufficient guarantee of the excellence of the work thus contributed. No better plan than this could have been followed; it has been adopted in other works with conspicuous success.

The subject-matter is divided into twenty-three sections, of which, perhaps, those dealing with the

gums, resins, vegetable fats, starches, barks, woods and fibres are the most important, comprising, as they do, some 1135 pages out of 1822. The classification of the substances dealt with rests, therefore, upon a scientific basis, and is no doubt the best that could have been adopted, though it has the disadvantage of disregarding the uses to which the various products are put; materials that are used in any particular industry are therefore often scattered throughout the work, an inconvenience which might easily be remedied by the introduction of lists of the substances tabulated according to their uses.

The arrangement of each section may be illustrated by a short description of one of the most important, viz. the resins, which covers some 200 pages, and has been written by Profs. Wiesner and Bamberger. Commencing with a description of the characters of resin generally, the authors pass to the consideration of the physical characters of the resins, and then deal with the chemical composition of such as have been investigated. Following upon this is a long list of plants, mostly trees, from which resins have been obtained, and lastly, a detailed account of each of the more important members of the group. Considerable attention has been paid to the appearance of the interior, as well as the exterior, when examined under the microscope, the various lines, fissures and other markings that make their appearance during the drying and weathering of the resin being described. Many of these appear to be characteristic, but they are not always easy to discern.

The formation of the resins in the cells in which they are produced, and especially the pathological formation, whether intentionally or accidentally induced, is, however, briefly treated. This is somewhat a matter for surprise. Recent researches have shown that certain valuable resins and oleo-resins are pathological products the formation of which is artificially induced, and it remains to be seen whether in other cases a similar formation or increase of production cannot be brought about, a problem of great economic importance.

The chemical composition is well brought up to date, all the recent investigations of Prof. Tschirch and his pupils having been thoroughly sifted.

The sections on fibres, by Prof. Wiesner himself, and on woods, by Prof. Wilhelm, both very important subjects, are most completely and attractively dealt with. More than 100 different kinds of timber are described, and many are illustrated by woodcuts of their transverse sections. In both of these sections the hand-lens and the microscope play, as may be imagined, a very important part. A useful adjunct to each of these sections would be an analytical key by which an unknown member of the class might, within certain limits, be identified.

The starches form another group that has received detailed treatment. The formation of starch, its chemical composition and the changes it undergoes when hydrolysed, are very thoroughly discussed. The groups of catechus, india-rubbers and vegetable fats have been dealt with by Prof. Mikosch, and somewhat more briefly, considering their great technical importance, than the other sections of the work.

Very conspicuous throughout both volumes is the scientific treatment that underlies the descriptions of the substances dealt with. It is this that raises the work above an ordinary handbook for merchants, and places it amongst scientific treatises. It is, in fact, a scientific treatise on the raw materials of the vegetable kingdom.

Whilst the information given is generally trustworthy, it must be admitted that here and there defects occur. Thus, for instance, the commercial varieties of benzoin are scarcely in accordance with the conditions obtaining on the London market at least; African kino might have received more consideration than it does, whilst Butea kino is comparatively rare; the botanical source of patchouli leaves is open to question. But these are small matters, and do not appreciably detract from the value of the treatise.

Prof. Wiesner and his colleagues have undoubtedly supplied a want that has long been felt. They have given to all who are interested in economic products a ready means of obtaining scientific as well as technical information concerning them. Such a work cannot but prove indispensable to many busy men, and as such it can be confidently recommended.

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DISEASES OF THE RESPIRATORY AND CIRCULATORY ORGANS.

A Manual of Medicine. Edited by W. H. Allchin, M.D., F.R.C.P., Lond. Vol. iv. Diseases of the Respiratory and Circulatory Systems. Pp. xi+493; illustrations, charts, coloured plates and tables. (London: Macmillan and Co., Ltd., 1902.) Price 7s. 6d. net.

Diseases of the Organs of Respiration. By Samuel West, M.A., M.D., F.R.C.P. In two volumes. Pp. xix+913; with numerous diagrams and illustrations. (London: C. Griffin and Co., Ltd., 1902.) Price 1l. 10s. net.

THE first book before us is the fourth volume of Dr. Allchin's "Manual of Medicine," and deals with the diseases of the circulatory and respiratory organs; as in the other volumes of this manual different sections are dealt with by different writers. It may be said at once that volume iv. is quite up to the high standard already attained by its predecessors, and while being less cumbersome and involved than the larger manuals or systems of medicine, contains all that can, in ordinary circumstances, be required by either the advanced student or the practitioner of medicine; as in the preceding volumes bibliographies have been suppressed, and references to authors are few and far between. The book suffers, perhaps, from being too condensed, but it is difficult to see how this, without restricting its sphere of usefulness, was to be avoided.

In the present review it would be impossible to give any detailed account of the essays which compose the volume. They are written by authors of reputation in the subject of which they write, and bear sometimes

more, sometimes less marked evidence of individuality. Two essays by Mr. Leonard Hill, one on the general anatomy and physiology of the respiratory system and one on that of the circulatory system, open the respective sections of the book. These articles are very condensed but very comprehensive, and occupy approximately one-tenth of the volume. The advisability of including such articles in a book of this kind may be open to question; if they are included, however, it is certainly well that they should be complete.

Approximately 300 pages are devoted to the diseases of the respiratory organs; more than 200 of these are written by Dr. Hector Mackenzie; in this connection we would draw especial attention to a section on the general symptomatology of diseases of the lower respiratory tract, which is lucidly written and well classified.

Practically the whole of the section devoted to diseases of the circulation is written by Dr. Mitchell Bruce. The author devotes considerable space to the physical examination of the heart and vessels, and to the general symptomatology of cardio-vascular disease. The section devoted to the course and prognosis of heart disease is one of the most valuable in the book, the subject being treated in a very able manner. The public are far too prone to regard morbus cordis from the point of view of prognosis as an entity; the section before us shows how utterly unjustifiable this generalisation is, and how the whole key to the question of prognosis in heart disease depends upon the way in which the patient's cardio-vascular system reacts to the cardiac lesion, and the life which he is prepared to lead. The treatment of heart disease is fully discussed upon accurate physiological lines, but here we think the author might have entered more fully into the physical methods of treatment, such as massage, exercises, &c., and the effect of these upon the normal and pathological circulation.

The volume closes with a very interesting essay upon oedema, including under this term dropsy in its general sense. Although much in this chapter is to be found in text-books on general pathology, yet, nevertheless, the inclusion of it in the volume before us will doubtless prove of convenience to the reader.

In conclusion we may say that the volume is thoroughly to be recommended, both to the student and the practitioner, and we have little doubt it will receive at the hands of the medical profession the success it deserves.

The second work we have before us is one of quite a different character. It is a compendious treatise on diseases of the respiratory organs. Its author, Dr. West, has devoted much time and work to its compilation, and the book bears very strongly an individual stamp. Many diseases, and occasionally even different varieties of the same disease, are illustrated by the notes of clinical cases for the most part derived from the practice of the author. It is difficult with the space at our command to draw adequate attention even to special chapters.

It may be at once said that the book is not suitable for the ordinary student, and will probably find its